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SITE EVALUATION REPORT FORMAT

SITE EVALUATION REPORT FOR THE *(Insert Proper SRS/FFA Appendix G.1 Title)(Bldg # or NBN)*

(This SER Template was updated in May 1999, and will be updated, as required, to address any DOE concerns and changes in Regulatory Agency requirements. This template text uses Times New Roman Font at size 12, Headers and Footers are size 10, single spacing, right justification for headers and centered for footers)

Date

WESTINGHOUSE SAVANNAH RIVER COMPANY
SAVANNAH RIVER SITE
AIKEN, SC 29808

DISCLAIMER

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1.0 INTRODUCTION

Site Evaluation Reports are prepared in accordance with Section 300.410 and 300.420 of the National Contingency Plan (NCP). They are mandated by the Savannah River Site Federal Facility Agreement (FFA), Section X, Site Evaluations. The [*official FFA title (Bldg # or NBN if no Bldg. # is specified)*] is listed in Appendix G.1, Areas To Be Investigated, of the FFA.

The purpose of this investigation was to obtain sufficient information concerning conditions at (*insert official FFA title*) to assess the threat, if any, posed to human health and the environment and to determine the need for additional action under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or other appropriate action. The scope of the investigation included a review of the files and historical data, site visits, soil sampling (if applicable), interviews, a Radiological Control Survey, and [*state others as required to describe briefly what was done*].

2.0 AREA DESCRIPTION, OPERATIONAL HISTORY, AND WASTE CHARACTERISTICS

2.1 Location

The Savannah River Site (SRS) occupies an area of approximately 300 square miles adjacent to the Savannah River, principally in the Aiken and Barnwell Counties of South Carolina. The Site is approximately 25 miles south of Aiken, SC. The Site Evaluation Area is located in the (*briefly state where the SEA is located within the SRS*) of the SRS. Also, mention the distance from the SEA to the nearest SRS boundary.

Give directions to the Site Evaluation Area (SEA); start at either SC Route 125 or SC 19, whichever is closest. At entrances to SRS include some statement like "To travel on Road C past the barricade (identify barricade #), visitors must have an SRS badge or be escorted." If the Site Evaluation Area lies within the "fenced" portion of a facility (i.e. Reactors, F/H-Areas, etc.) state that only government or other authorized vehicles are permitted to enter the fenced portion of the facility and all private vehicles must park in the lot outside the facility. Continue directions to the SEA upon reaching the perimeter fence. Include the general SRS site map as Appendix A, showing the location of the SEA and a specific (detailed) SEA map as Appendix B. The SEA should be noted on the map. Include the SRS coordinates of the northeast corner or the center of the SEA and the longitude and latitude (in decimal degrees) of the SEA.

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2.2 Area Description

Physically describe the SEA: (draw a picture with words) i.e.: mature pine trees with some undergrowth of blackberry vines, grassy, etc. Does the SEA appear well-drained? What are the physical boundaries - Road C-to north, unnamed stream to south, mixed trees to east... etc. ? Include "historical" picture and/or a recent color photograph(s) as Appendix C. (In certain instances, photos may not be available due to security restrictions. If so, state this fact in the Report).

Include location of Threatened and Endangered Species and/or sensitive habitats, if within 1/2 mile (otherwise make statement that no Threatened and Endangered Species/habitats are within this area, if that is the case!). Include map, showing these habitats, if applicable, as Appendix D, Figure D.1. The SEA is located within the _____ Watershed. Include map showing the location of the SEA within the Watershed. Label as Appendix D, Figure D.2 or D.1, if no T&E habitat map is necessary.

Include location of the nearest RCRA/CERCLA unit and closest SEA (in two separate paragraphs), particularly if up- or side-gradient of the SEA). Include a map of these units/areas as Appendix E, Figures E.1. (If not already shown in Appendix B). Describe the status of this unit/area. List dates of approved reports and numbers, decisions by the EPA/SCDHEC, recommended actions, and dates of decisions, etc.

Use the following for SEAs inside fenced areas: These SEAs have been identified with alphanumeric codes. These identifiers are from the Savannah River Site Plan for Performing Maintenance in Federal Facility Agreement Areas (O&M Plan) (U) (WSRC-RP-96-45) (12/15/96). In that document, most Site Evaluation Areas located within the facility perimeter fences or adjacent to that facility have been assigned a discrete number. These identifiers help to ensure that these Site Evaluation Areas do not get overlooked while assessments for adjacent areas are being conducted. (Identify these alphanumeric codes for the adjacent SEAs). (Note: SEAs that are spill events may not be identified with an alphanumeric code. The above paragraph may be eliminated if this is the case). For SEAs that have numerous adjacent Site Evaluation Areas and RFI/RI units (i.e. F-Area, H-Area, M-Area, etc.), state the number of SEAs/Units in the vicinity, and then list only the closest one. The only exception to this would be if there were a SEA/Unit that was not the closest but would have an impact. Appropriate data would be included for the mentioned SEAs/Units only.

2.3 Operational History and Waste Characteristics

Describe the history of the SEA, as best we know it; what happened here, when did the SEA open, when did it close? What was dumped/stored/spilled here? Include spill reports, if available, as an appendix If a spill report is not available then insert the following: The (insert name of the SEA) occurred at or within (insert details), according to the SRS SID (Site

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Incident Databank) (See Appendix ____). [NOTE: Information obtained in the SID is not for public dissemination and has not been included in this Report]. *On the Appendix cover sheet insert the following statement:* [NOTE: Information obtained in SID is not for public dissemination and has not been included in this Report. The following pages show user information and query instructions for the Databank].

[Do not be concerned that many of our past operations & waste practices would now be considered illegal, or at best questionable. We will NOT be fined, chastised, etc. by the regulators; the important point now is to try to discover what got dumped/spilled, and what are we going to do about it or what we did].

3.0 SAMPLING/MONITORING DATA HISTORY

3.1 Sampling Data

[NOTE: Even when field sampling is not required, a Radiological Control Survey must be performed, unless the SEA is inside a building or is located within a Rad area, or has routine RCO surveys performed, as part of a facility. State this fact, if applicable.]

A Radiological Control Survey of the Site Evaluation Area was conducted on *(insert date)* to support the development of the Health and Safety Plan and to ensure the protection of workers during the soil sampling activities. This survey consisted of measuring background radiation levels, probing the surface for possible contamination, and collecting random soil samples (0-6 inches below the ground surface) for analysis in a radiological counting facility. *If true, state:* No radiological contamination was found during this survey, and the SEA was designated as a "Clean Area" on the RCO Survey sheet. *(A copy of this Survey is not included within an appendix). If contamination was found, discuss this, i.e. speciation, etc.) Include a map showing the bounds of the radiological survey as Appendix F, Figure F.1.* Appendix F also presents the results from a radiological screening for alpha and non-volatile beta for two sample locations *(Insert the sample identification numbers here)* taken from within the Site Evaluation Area. These screening operations were performed by the SRS Analytical Laboratories Group. *If true, state:* The two samples were below the screening value of 50 pCi/g for non-volatile beta and below the screening value of 20 pCi/g for gross alpha. *[NOTE: for those SEAs that have been designated as an archaeological/historical site use the following regarding the RCO survey:* On *(insert date)* a Radiological Control Survey was conducted to ensure that this area poses no threat to the environment (See Appendix ____, Figure ____). This survey consisted of measuring background radiation levels and probing the surface for possible contamination. Due to this area being considered an archaeological/historical site and therefore should not be disturbed, no random soil samples were taken as part of this survey. *State if the area was designated as a "Clean Area" or if contamination was found, discuss this, i.e. speciation, etc.*

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Next paragraph: Note when soil or other samples were collected; briefly describe analysis (TAL, TCL, rads., BTEX, etc.); number of samples; particularly depth of samples; describe labeling of samples depths/letter designations, etc., discuss results, (mention by family i.e. TALs, PCB's, TCLs, etc., any hits above the detection/reporting limit but less than the RBC's and any hits above the RBC's. This includes both man made and natural substances out of the ordinary). A table of any identified constituents above the EPA Region III residential and/or industrial soil ingestion limits must be included as part of the text. Make sure that the most recent EPA limits are used. At this time 5/99), EPA RBC limits dated April 12, 1999, are in effect. Should a constituent be above the residential and/or industrial RBCs, then the constituent's level may be compared with twice the mean for that same constituent from the background locations and at the same depth interval. For any background samples labeled with a "u" qualifier, use the MDL in calculating the mean. Mention the SCDHEC Bureau of Land and Waste Management levels for lead (400ppm residential and 895ppm industrial). Compare any levels, above the EPA Region III RBCs, to twice the site specific background limit for that particular constituent, as SCDHEC allows us to state that the concentrations are below twice the background. Discuss quality control and any discrepancies in the laboratory analyses Case Narratives. Also, note that these discrepancies are detailed in Appendix G. Indicate the sampling results that were not used in the site evaluation, and why, and whether this would impact the conclusions of the site evaluation. Mention, however, that these samples were used as estimates in the site evaluation process. If there are no discrepancies, state such. Include sample location map, Soil Sample Table, Case Narrative, sample analysis results, chain-of- custody forms, field notes (if applicable), as Appendix G. Note, that some Site Evaluation Areas do not require soil sampling. If this is the case, then this paragraph regarding soil sampling will be eliminated. However, you must justify why no sampling was necessary.

3.2 Monitoring History

If no monitoring has been done at the SEA, use this statement, "Since there is no history of hazardous waste, hazardous constituents, or radiological materials being deposited at the (name of the SEA), no monitoring has occurred or is required." Mention nearest monitoring and production wells and sampling history, if available. Check with the EPD (Buford Beavers) to get the status of production wells. Monitoring well data is found in GIMS. If monitoring is taking or has taken place describe such and what was the purpose of this monitoring.

4.0 GROUNDWATER PATHWAYS

4.1 Hydrogeological Setting

"The Savannah River Site (SRS) is located on the Upper Atlantic Coastal Plain, approximately 20 miles southeast of the Fall Line, which separates the Piedmont and Coastal

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Plain Physiographic Provinces. The SRS is on the Aiken Plateau, a relatively flat area that slopes southeast and is dissected by several tributaries of the Savannah River. The SRS is underlain by a 700 to 1,200 foot-thick, seaward-thickening wedge of Coastal Plain sediment composed of unconsolidated sand, clayey sands, sandy clays, and less amounts of calcareous sediment. These layers are underlain by dense crystalline igneous and metamorphic or younger consolidated sediments of the Triassic Period. Within the Coastal Plain sediments, the sandy strata are generally porous and permeable and may form aquifers." A standard cross-section of soils, with major streams noted, is presented in Appendix H, Figure H.1. (*Appendix H is the drawing showing the standard cross-section of soils with major streams at the SRS*).

State the watershed that the SEA is located and reference the previous appendix, where the location map can be found. Mention the elevation above mean sea level (msl) and the depth to groundwater and predicted groundwater flow. Include groundwater information, if available. Include location of the nearest monitoring well(s) (do not include all monitoring wells within a 4 mile radius) and nearest production/domestic well(s) (within a 4 mile radius of the SEA) and distance from the SEA. State whether wells are side, down, or upgradient of the SEA. This is the place to expand upon well monitoring results if appropriate. Have constituents of concern from the SEA shown up in the well(s)? Could there be other units that also may impact that well. Discuss such, if applicable. A map showing the SEA in relation to monitoring, production/domestic, wells (typically from the SRS EPD/EMS Well Inventory Book, ESH-EMS-980590, July 1998) and appropriate well testing data should be included as Appendix I. Identify potential seepage points to nearest surface waters. Include adjacent wetlands as groundwater targets. If domestic water distribution system is present at the SEA, mention such. This will usually be the case within Facility Areas (A, B, C, F, H, etc.)

Any other information regarding the particular soil type found at the SEA should be included, if available; do not perform a special study to gather this information (Use the "Soil Survey of the SRP Area, of Aiken, Barnwell, and Allendale Counties, SC, as published by the USDA, SCS, June 1990). This information can also be placed in Section 5.1.

4.2 Groundwater Targets

These targets are defined as drinking water supply wells (domestic/production) within 4 miles of the SEA; is groundwater used for purposes other than drinking water (irrigation, food preparation, etc.?) Describe as appropriate; if the SEA does not impact any potential water supply source, state where the nearest supply wells are and their relationship to the SEA, i.e.: up-gradient, down-gradient, side-gradient. Include information on drinking water wells, if appropriate, i.e. sampling results, etc., also in Appendix I).

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4.3 Groundwater Conclusions

What are your conclusions? Why? If there are no impacts on groundwater, state the following: "There is no history of hazardous waste, hazardous constituents, or radioactive materials being disposed at the (insert the SEA title). Considering the history, location, soil sample results, the DOE believes that the Site Evaluation Area has not impacted the groundwater."

5.0 SURFACE WATER PATHWAY

5.1 Hydrologic Setting

Discuss surface water drainage, which direction, closest surface water(s) (wetlands are considered surface waters) that may be impacted by the SEA. Range of concern is 2 miles. If appropriate, include area drainage/outfall maps as Appendix J. Identify probable point of entry of surface water into stream, creek, wetlands, etc. If the area is located in a facility area, then the report needs to include applicable NPDES maps, in Appendix J. State the watershed that the SEA belongs to and reference back to the previous Appendix showing such. You can place information regarding the soil type(s), present at the SEA, in a separate paragraph. Mention if drainage gullies are present and if, ponding of water is noted after rainfall events.

5.2 Surface Water Targets

What targets exist within 2 miles of units? Targets here are fisheries, Threatened and Endangered Species (Reference appropriate Appendix that contains the location map, if applicable), wetlands (Use the National Wetlands Inventory Maps, as published by the USFWS, 1993, for wetland locations), intake(s) for drinking water, other human-related consumption (i.e. farming, livestock, etc.), State that: "No fishing is permitted within the SRS."

5.3 Surface Water Conclusions

What are your conclusions? Why? If there are no impacts to surface waters, state the following: "Due to the history, location, operational characteristics, the DOE believes that the (Insert the SEA name) has not impacted the surface water or the Threatened and Endangered Species Habitats (If applicable)."

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6.0 SOIL EXPOSURE AND AIR PATHWAYS

6.1 Physical Conditions

Briefly re-describe the physical description of the SEA, especially ground surface conditions. Mention the nearest active/occupied facilities/buildings, etc. State that: "Long-term entry control procedures for access to the SRS have made casual access to this SEA very difficult."

Research has shown that there is no prevailing wind at the SRS, which is typical of the lower midlands of South Carolina. This SEA is located approximately (*Insert miles*)_miles from the nearest SRS boundary.

6.2 Soil and Air Targets

Soil/Air Targets via air pathways are defined as within 4 miles (radius)(Facilities, buildings, residences, etc.) and 1/2 mile for sensitive environments. Are there any targets? Mention Threatened and Endangered Species Habitats, if applicable, and describe & analyze, as appropriate.

6.3 Soil Exposure and Air Pathway Conclusions

*What are your conclusions? Why? If there are no impacts due to soil exposure or air pathways, state the following: "The DOE believes that limited personnel access to the Site Evaluation Area, lack of prevailing winds, and a stable ground surface that impedes wind erosion/dusting, do not present a threat to human health and/or the environment and to the Threatened and Endangered Species Habitats (If applicable), due to soil exposure or air pathways from the (*Insert the name of the SEA*)."*

7.0 SUMMARY AND CONCLUSION

State the title of the Site Evaluation Area from Appendix G.1 (with building No. or NBN) and briefly describe any impacts to the environment and/or to human health from the Site Evaluation Area. Briefly review the findings (sampling results, constituents present, and levels above or versus residential/industrial RBC's, twice site specific background levels, etc.) State; "No radiological contamination was found during the Radiological Control Survey."

(You MUST make a CLEAR Conclusion, and there are four possible conclusions:)

1) For Transfers of Site Evaluation Areas to Appendix C, RCRA/CERCLA Units, include justification (i.e. efficiency [combining units], benchmarks exceeded [e.g. RBCs])

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Include the following: "Based on the information gathered for this report, past operational history, and *(describe environmental impacts)*, it is recommended that a more complete and formal investigation of this Site Evaluation Area be undertaken. Therefore, it is recommended that the *(Title of SEA from Appendix G.1 with building No. or NBN)* be further evaluated under the RFI/RI Program and that this Site Evaluation Area be deleted from Appendix G.1 and placed on Appendix C (RCRA/CERCLA List) of the FFA.

2) *If the SEA is recommended for inclusion in the D&D program (this must be negotiated/approved by the DOE/SR prior to them reviewing this report), use the following statement:* "It is recommended that the *(Title of the SEA from Appendix G.1 with building No. or NBN)* remain on Appendix G.1, Areas To Be Investigated of the FFA and be evaluated after the Decontamination and Decommissioning of the surrounding facilities."

3) *If a removal action is necessary (requires public involvement, costs less than \$2 million and less than 1 year to complete [this must be negotiated/approved by the DOE/SR prior to review of the report]).*

4) *If a NFA designation is recommended, then the following statement is required:* "In accordance with 300.420(b)(1)(i) of the NCP, *(Title of the SEA from Appendix G.1 with building No. or NBN)* poses no threat to human health or the environment. It is recommended that *(Insert the SEA Name)* be removed from Appendix G.1, (Areas to Be Investigated) and placed on Appendix G.2, (Areas Determined to Require No Further Response Action) of the SRS Federal Facility Agreement."

Additional housekeeping may be required before an NFA is appropriate. In this situation, the following should be added to the end of the above statement: "after housekeeping is completed at the Site Evaluation Area."

(General Note: Additional Appendices (i.e. copies of spill reports, etc.) may be needed and the sequence of Appendices' labeling may be adjusted to include for these additions.) Also, note that all maps, pictures, drawings, etc. contained in the Appendices must be labeled with a title and figure number, SER#, and Appendix label. Figure numbers should be used in references in body of SER. For example, Figure F.1, F.2, etc. Refer to Appendix format sheets at the end of this template.

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REFERENCES

(List all references, maps, reports, personal communications, etc. used in the SER and number in sequence 1, 2, 3, 4, etc. Use the WSRC Style Guide for formatting the reference section of the SER)

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APPENDIX A, B, C, D, E, F, G, H, I, J, etc

(Insert Title of Appendix in Caps., Font 12 and center)

(Note, the Appendix containing the soil analyses data will, most likely, be the largest Appendix, and it must contain the following items: Soil Sampling Location Map, Soil Sampling Table, if you feel such is necessary, as this is usually discussed in the text, Discussion of the Analyses Data [QA/QC, etc.], Definition of Terms, Abbreviations, and Laboratory Codes, Data Summary Screening Report, Case Narrative, and Chain-of-Custody Forms. The Data Screening Summary Report will be in the computerized format previously set-up between the ERD and the EMS)

Appendix ____

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This page shows the general header and footer format for an Appendix sheet layout. In some cases, an Appendix may not be a figure, map, photo, etc. In this case, you do not need to enter a title in the Footer, just a page #(s). For example, a Spill Report, etc.